

IN THE CLAIMS:

Claims 2-3, 5-6, 8-11, 13-14, 16-17 and 19-26 currently stand, wherein new claims 23-26 are being submitted for consideration, and the remaining claims are being amended as follows:

1. (Cancelled)
2. (Currently Amended) A perpendicular magnetic recording medium including a substrate and a magnetic layer formed on the substrate, said magnetic layer comprising:

multilayer superlattice films of ferromagnetic metal layers which contain Co and paramagnetic metal layers which consist of Pd and/or Pt, said magnetic layer consisting of columnar magnetic grains and magnetic grain boundaries that surround the magnetic grains, and a thickness of said paramagnetic metal layers being 0.8 nm or less,

said magnetic layer having a rate of decrease in coercivity defined by said multilayer superlattice films of ferromagnetic metal layers being formed by sputtering deposition with a distance D_{TS} between the substrate and target areas of said multilayer superlattice films of ferromagnetic metal layers defined such that a product ($P_O * D_{TS}$) of a sputtering gas pressure P_O and said distance D_{TS} is at least 20 Pa*cm, wherein

said rate of decrease in coercivity of said magnetic layer, if exposed to extreme temperature change, is less than 0.15 when said rate is evaluated by a formula: $[H_c \text{ at 25 degrees Celsius} - H_c \text{ at 70 degrees Celsius}] / H_c \text{ at 25 degrees Celsius}$, where H_c is the coercivity of said magnetic layer.

3. (Currently Amended) A perpendicular magnetic recording medium including a substrate and a magnetic layer formed on the substrate, said magnetic layer comprising:

multilayer superlattice films of ferromagnetic metal layers which contain Co and paramagnetic metal layers which consist of Pd and/or Pt, said magnetic layer consisting of columnar magnetic grains and magnetic grain boundaries that surround the magnetic grains, and a thickness of said paramagnetic metal layers being 0.8 nm

or less,

said magnetic layer having a rate of decrease in coercivity defined by said multilayer superlattice films of ferromagnetic metal layers being formed by sputtering deposition with a distance D_{TS} between the substrate and target areas of said multilayer superlattice films of ferromagnetic metal layers defined such that a product ($P_O * D_{TS}$) of a sputtering gas pressure P_O and said distance D_{TS} is at least 20 Pa*cm, wherein

when a magnetic torque loop of said perpendicular magnetic recording medium is measured with a torque magnetometer, the polarity of a value of loop components with translational symmetry of 90 degrees is opposite to the polarity of a value of loop components with translational symmetry of 180 degrees.

4. (Cancelled)
5. (Previously Presented) The perpendicular magnetic recording medium according to claim 2, wherein ~~said magnetic layer consists of magnetic grains and magnetic grain boundaries that surround the magnetic grains~~, a density of said magnetic grains being greater relative to a density of said magnetic grain boundaries.
6. (Previously Presented) The perpendicular magnetic recording medium according to claim 3, wherein ~~said magnetic layer consists of magnetic grains and magnetic grain boundaries that surround the magnetic grains~~, a density of said magnetic grains being greater relative to a density of said magnetic grain boundaries.
7. (Cancelled)
8. (Original) The perpendicular magnetic recording medium according to claim 2, wherein a M-H slope parameter α that corresponds to reversal of magnetization in an M-H loop, falls within a range of 0.5-2.0.
9. (Original) The perpendicular magnetic recording medium according to claim 3, wherein a M-H slope parameter α that corresponds to reversal of magnetization in an M-H loop, falls within a range of 0.5-2.0.

10. (Currently Amended) The perpendicular magnetic recording medium according to claim 2, wherein said ferromagnetic metal layers further contain a paramagnetic element ~~and the thickness of said paramagnetic metal layers is 0.8 nm or less.~~
11. (Currently Amended) The perpendicular magnetic recording medium according to claim 3, wherein said ferromagnetic metal layers further contain a paramagnetic element ~~and the thickness of said paramagnetic metal layers is 0.8 nm or less.~~
12. (Cancelled)
13. (Original) The perpendicular magnetic recording medium according to claim 2, wherein said ferromagnetic metal layers contain at least one of the paramagnetic element selected from the group consisting of Pt, Pd, Au, Ag, Ru, and Cu.
14. (Original) The perpendicular magnetic recording medium according to claim 3, wherein said ferromagnetic metal layers contain at least one of the paramagnetic element selected from the group consisting of Pt, Pd, Au, Ag, Ru, and Cu.
15. (Cancelled)
16. (Original) The perpendicular magnetic recording medium according to claim 2, further including a seed layer between said substrate and said magnetic layer, wherein said seed layer is a composite layer comprising an oxide layer and a metal layer which has a face-centered cubic lattice or a hexagonal close packed lattice.
17. (Original) The perpendicular magnetic recording medium according to claim 3, further including a seed layer between said substrate and said magnetic layer, wherein said seed layer is a composite layer comprising an oxide layer and a metal layer which has a face-centered cubic lattice or a hexagonal close packed lattice.
18. (Cancelled)

19. (Original) The perpendicular magnetic recording medium according to claim 16, where said seed layer is a metal layer or an alloy layer containing at least one element selected from the group consisting of Au, Ag, and Ru.
20. (Original) The perpendicular magnetic recording medium according to claim 17, where said seed layer is a metal layer or an alloy layer containing at least one element selected from the group consisting of Au, Ag, and Ru.
21. (Previously Presented) A perpendicular magnetic recording medium according to Claim 2, said sputtering gas contains Oxygen.
22. (Previously Presented) A perpendicular magnetic recording medium according to Claim 3, said sputtering gas contains Oxygen.
23. (New) A perpendicular magnetic recording medium including a substrate and a magnetic layer formed on the substrate, said magnetic layer comprising:
multilayer superlattice films of ferromagnetic metal layers which contain Co and paramagnetic metal layers which consist of Pd and/or Pt, said magnetic layer consisting of columnar magnetic grains and magnetic grain boundaries that surround the magnetic grains, and a thickness of said paramagnetic metal layers being 0.8 nm or less.
24. (New) The perpendicular magnetic recording medium according to claim 23, wherein said ferromagnetic metal layers further contain a paramagnetic element.
25. (New) The perpendicular magnetic recording medium according to claim 23, wherein said ferromagnetic metal layers contain at least one of the paramagnetic element selected from the group consisting of Pt, Pd, Au, Ag, Ru, and Cu.
26. (New) The perpendicular magnetic recording medium according to claim 2, further including a seed layer between said substrate and said magnetic layer, wherein said seed layer is a composite layer comprising an oxide layer and a metal layer which has a face-centered cubic lattice or a hexagonal close packed lattice.